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NFPA 1710: A Compliance Evaluation of the Prince George's County

Fire & Emergency Medical Services Department

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Certification Statement

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

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Abstract

The problem investigated was that the Prince George's County Fire and Emergency Medical Services Department (PGFD) had not determined if it met the requirements of NFPA 1710, as it pertained to unit staffing assignments and response times. The research purpose was to determine Prince George's County's current level of compliance with NFPA 1710 as it related to those areas. Evaluative research was utilized to compare the specific requirements of NFPA 1710 to PGFD's unit staffing and response times. A comprehensive literature review, a statistical analysis of computer aided dispatch (CAD) records, and interviews were utilized to answer the following questions: (a) Did PGFD meet NFPA 1710 apparatus staffing objectives? (b) Did PGFD meet NFPA 1710 response time objectives for fire and emergency medical incidents? (c) Did PGFD's cross-staffing model impact BLS service delivery? The results illustrated PGFD's unit staffing and response times do not comply with the objectives that are suggested in NFPA 1710 and that the Department's staffing model impacts all facets of service delivery. The subsequent recommendations suggest that PGFD should adjust its staffing model to dedicated unit staffing, establish annual response time goals, and foster relationships and educate community stakeholders about the importance of adequate funding for the fire service.

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Introduction

In the United States, fire protection and emergency medical services are essential core functions of local government. Elected officials, emergency managers, and other bodies of government spend a great deal of time struggling over the subject of the amount of money to spend on emergency services. Influenced by competing interests, fluctuation in funding and other external factors, decision makers are in many cases influenced by political and financial interests (Carter & Rausch, 2007).

Without the mandate of a national standard, law or other piece of legislation to expressly define what the minimum level of protection should be, decision makers have established fire protection levels with a great deal of autonomy (Rukavina, 2001). However, in 2001, the National Fire Protection Association (NFPA) issued consensus standard 1710 to establish a benchmark for staffing levels, deployment, and response times for career departments nationwide.

Prince George's County, Maryland is a rapidly developing urban/suburban community that has experienced significant residential growth over the last twenty years. Like many communities, the County is struggling with its ability to keep pace with demand in providing appropriate services, infrastructure and facilities. The fire department is not immune to this problem; in fact, as demand for services continues to grow each year, the department's career and volunteer staffing levels have steadily declined (TriData, 2004).

The problem was that the Prince George's County Fire and Emergency Medical Services Department (PGFD) had not determined if it met the requirements of NFPA 1710, as it pertained to staffing assignments and response times. The purpose of this research was to determine

Prince George's County's current level of compliance with NFPA 1710 as it related to those areas.

Evaluative research was utilized to compare the specific requirements of NFPA 1710 to PGFD's unit staffing and response times. The evaluative research method was used to answer the following questions: (a) Did PGFD meet NFPA 1710 apparatus staffing objectives? (b) Did PGFD meet NFPA 1710 response time objectives for fire and emergency medical incidents? (c) Did PGFD's cross-staffing model impact BLS service delivery?

Background and Significance

Prince George's County is located in the State of Maryland immediately adjacent to the District of Columbia. With a population approaching one million residents, the county is the wealthiest African-American majority jurisdiction in the United States (U.S. Census, 2005). At the heart of the Baltimore/Washington corridor, the county is a diverse community with 28 municipalities, pockets of wealth, expanding upper-middle class communities and acres of urban blight (Prince George's County, 2009).

In March 1966, Prince George's County established the position of paid firefighters under a merit classification system. At that time, the county absorbed the individuals hired by various County volunteer fire department corporations. With the assistance of the District of Columbia Local 36, the International Association of Fire Fighters (IAFF) Local 1619 received its charter that same year.

In 1970, Prince George's County adopted a charter form of government comprised of an executive branch headed by a County Executive and a Legislative Branch consisting of an elected County Council (Bryant, 1999). The County Executive is responsible for the day-to-day administrative and executive functions of government, while the 9 member County Council is

responsible for the legislative functions of county government. The councilpersons are elected from nine separate geographic council districts. As a charter home rule form of government within Maryland, Prince George's County is authorized to enact local ordinances and laws without taking them to the Maryland General Assembly.

With the enactment of Charter Government came the creation of the Prince George's County Fire & Emergency Medical Services Department, under the command of a Fire Chief, appointed by the County Executive, and confirmed by the County Council. Under the existing County Code, the fire chief is the ultimate authority on all operations of the fire department and has the legitimate responsibility to ensure that all department functions are properly carried out. The Charter also unified the independent volunteer fire corporations under the authority of a central County department (Prince George's County Fire & EMS Department [PGFD], 2005a).

Today, the Prince George's County Fire & EMS Department is one of the busiest combination career and volunteer systems in the nation, responding to over 130,000 calls for service each year. The Department is currently comprised of a combination of approximately 1500 career uniformed personnel and volunteers staffing 45 community based fire and rescue stations. The Department is responsible for all fire suppression activities, both Advanced Life Support and Basic Life Support delivery systems, hazardous materials mitigation, and fire prevention and investigations (PGFD, 2008). The PGFD provides fire and emergency medical services to a number of high-profile facilities including the NASA Goddard Space Flight Center, Andrews Air Force Base, the United States Census Bureau, the National Harbor, Six Flags America, the Washington Redskins FedEx Field, and the University of Maryland in College Park. Prince George's Fire Department is the busiest of the Washington metro-area jurisdictions, handling about 400 incidents each day (PGFD, 2009).

PGFD maintains a large and diverse fleet of state of the art apparatus and equipment, this provides the Department with the capability to respond to any type of emergency that it is called upon to mitigate. However, PGFD's current staffing methodology results in a significant portion of its apparatus fleet to be unavailable to respond to emergency incidents at any given time (PGFD, 2008)

Each of the forty-five stations has at least two types of apparatus, which could include any combination of the following: engine, truck, tower, rescue squad, BLS ambulance and ALS ambulance. This does not include stations that provide specialized apparatus or equipment, such as: hazardous materials, technical rescue, marine division, breathing air unit and others.

Unlike many other large Departments throughout the United States, PGFD utilizes the staffing methodology of staffing stations as opposed to staffing apparatus. The impact of staffing stations as opposed to apparatus, also known as cross-staffing, results in the need for personnel and apparatus to respond from stations that are geographically further from the emergency incident. A response from a unit that is required to travel a greater distance clearly impacts PGFD's response time capabilities and its ability to mitigate emergency incidents efficiently and safely. The response of understaffed units to emergency incidents has a cascading negative effect on the entire service delivery system (TriData, 2004)

Career staffing at each of the volunteer stations is arrived at after negotiation between the county and each volunteer fire department's leadership. PGFD deploys its career personnel to provide three staffing models based on demand. Four career employees provide coverage on weekdays from 7:00 AM through 3:00 PM, four career employees provide coverage 24 hours a day at all times, or two career employees provide coverage 24 hours a day at all times (Collective Bargaining Agreement [CBA], 2006).

Irrespective of a station's volunteer participation levels, the County does not fluctuate in its career deployment of four or two personnel. Assuming that there are four personnel available for emergency responses, upon receipt of a BLS ambulance emergency incident, two personnel will staff the BLS ambulance, leaving only two personnel to staff the remaining apparatus in the station. This staffing methodology has a negative impact on the system and often results in a number of understaffed and failed responses (TriData, 2004)

An objective of the Executive Analysis of Fire Service Operations in Emergency Management course presented at the National Fire Academy is to prepare senior fire officers in the administrative functions necessary to manage to operational component effectively. (National Fire Academy [NFA], 2007). The subject matter that is presented in this Applied Research Project relates directly toward that objective by analyzing raw data to evaluate existing practices and make recommendations for future operational improvements.

This applied research project also relates to the United States Fire Administration's objective of responding appropriately in a timely manner to emerging fire service issues (NFA, 2008). NFPA 1710 may well be the most controversial standard that has been promulgated in recent history. The conduct of research on this topic can only strengthen the pool of data that is available on staffing and response times.

Literature Review

In order to provide effective service, fire departments should have an operational profile that permits them to provide a level of service that is consistent with the demands of the community (International City Management Association [ICMA], 2002). Sometimes the decision about the type of operating profile to use is consistent with the demand and occasionally, as is the case with rapidly developing communities, it is not. In many cases, the

decision about the type of operating profile is best for the community is not made by a rational decision-making process, but rather, is often the result of incremental policymaking or is based on tradition (Reeves, 2006).

Firefighting is a hazardous and labor-intensive process. Although the tools and equipment used by firefighters have changed dramatically over the years, the basic goals have remained almost unchanged: to successfully extinguish fires, rescue anyone in danger, and not get injured in the process. To accomplish these tasks, firefighters must be able to quickly and efficiently gain access to the seat of a fire and apply an extinguishing agent. This requires emergency responders to operate in dangerous environments where they are at high-risk for serious injury or death (Angle, Gala, Harlow, Lombardo, & Maciuba, 2001).

The staffing systems used by the fire service in the United States are diverse in detail, but principally utilize career, paid-call, volunteer personnel or a combination thereof. Discussions about how to properly staff fire and EMS units have been a major topic of discussion for a number of years. Reaching a level of optimality is not an easy task and many communities struggle with how to reach a compromise between staffing levels and cost (Hoffman, 2003).

Some jurisdictions have utilized the concept of cross staffing to meet staffing needs while staying within budget. In this situation, a designated number of firefighters are assigned to a station, irrespective of the amount of apparatus that is housed in the station (Billmire, 2006). When one unit receives a call for service, the remaining units are either left unstaffed or they respond with an inadequate number of personnel. According to TriData (2004), staffing stations and not apparatus is commonly used in smaller communities and in communities where incident demand is fairly low.

In this profile, an array of different types of equipment are provided at each station and, depending on the call, the personnel at the station select the appropriate piece of equipment to handle the incident. Depending on the fire dispatch procedures a community may have in place, the initial units may be selected according to the type of call (PGFD, 2008). This procedure works well where overlapping calls are relatively rare and where limited staffing requires the crew to exercise more operational flexibility. Unfortunately, operating more stations with fewer personnel oftentimes compromises the safety of emergency response personnel while limiting the on-scene activities they can actually perform once they reach the scene (Billmire, 2006).

Typically, fire suppression efforts are of better quality when fewer companies respond with more personnel. Communities will have better results by having fewer, strategically located fire stations, staffed adequately, and equipped with multi-purpose vehicles to improve performance and flexibility (Bruno, 2001). Generally, fewer stations with better-staffed units provide better efficiency while still meeting response time goals.

Decreased staffing levels translate into the need for higher performance from individual firefighters. This practice has been linked to increasing the likelihood of fireground injury and accidents (Cushman, 1991). Understaffed units also require the supervisor to become part of the working team. While a certain level of participation by the supervisor is expected, supervisors engaged too heavily in the work of the unit have the potential to cause important information and observations to go unnoticed (International City Management Association [ICMA], 2005). Furthermore, responding more understaffed units has a negative cascading effect on the entire fire suppression system since more units respond to provide staffing thus leaving other areas unprotected, thereby increasing response time to other incidents (Roberts, 1993). All of these factors, individually or combined, generally lead to poor incident mitigation.

When evaluating the essential job functions of a Fire Department, it is necessary to break down the tasks of the services provided. In order to be effective, the emergency service system must be able to deliver the appropriate number of personnel and types of equipment to the scene of an emergency (Angle, et al, 2001) A basic review of engine company and truck company operations quickly illustrates the amount of staffing that is required to accomplish standard tasks.

Members of an engine company have specific responsibilities and duties to perform, often at the same time. Engine companies should be focused on three major tactical objectives on the fireground: life safety, extinguishment, and property conservation. This is usually accomplished by advancing an attack hose line of sufficient gallon per minute (GPM) flow and length to the fire area capable of confining, controlling, and extinguishing the fire (Richman & Person, 2008a).

The responsibilities of a ladder company are different than that of the engine company, however, at fire incidents both units need to work as a team in order for the operation to be successful. The ladder company's function is to support the engine in confining, controlling, and extinguishing the fire. The ladder company provides access to, and exits for, all parts of a fire building. Ladder company crews also are responsible for removing heat, smoke and gases to allow greater visibility and permit engine company crews to move rapidly and safely within a fire building or exposed buildings (Richman & Person, 2008b).

There are a number of research based documents that discuss Fire Department staffing. The most prevalent is the National Fire Protection Association 1710, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Departments* (NFPA 1710). NFPA 1710 is the

first international benchmark that sets specified criteria for fire service staffing and response levels (International Association of Fire Fighters [IAFF], 2001).

While there are multiple agencies and other parties that offer organizational and operational recommendations to fire departments, the NFPA is among the most influential. The NFPA is an international, nonprofit organization that is dedicated to reducing the worldwide burden of fire and other hazards by developing and advocating scientifically based consensus codes and standards, research, training, and education. The NFPA standards are recommendations and guidelines developed by committees of chief officers, volunteer representatives, union officials, and industry representatives (Carter & Rausch, 2007).

The NFPA 1710 Technical Committee reviewed numerous studies, evaluations and stakeholder reports containing empirical data on departmental response and mitigation of fire. These studies clearly demonstrate that for safe, effective and efficient fire suppression, each responding company needs a minimum of four fire fighters (Hoffman, 2003). NFPA 1710 has had several subsequent revisions; the most recent release is the 2010 edition. NFPA 1710 requires four on-duty personnel staffing for engine and ladder companies whose primary functions are to perform the variety of services associated with engine or ladder work. The standard calls for five or six person staffing for such companies in jurisdictions with tactical hazards, high-hazard occupancies, geographical restrictions and high-incident frequencies (NFPA, 2010b).

NFPA 1710 is not the only standard that makes reference to minimum staffing requirements. NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*, states that fire departments must provide an adequate number of fire fighters to safely carry out incident operations. The standard goes on further to state “In the initial stages of an

incident where only one crew is operating in the hazardous area at a working structure fire, a minimum of four individuals shall be required, consisting of two individuals working as a crew in the hazardous area and two individuals present outside this hazardous area available for assistance or rescue at emergency operations where entry into the danger area is required.”

(NFPA, 2007, p.24)

NFPA 1410, *Standard on Training for Initial Emergency Scene Operations*, suggests that it is strongly recommended that interior fire fighting operations not be conducted without an adequate number of qualified fire fighters and furthermore it is recommended that a minimum acceptable fire company staffing level consist of four members responding or arriving with each engine or aerial ladder company responding to any type of fire (NFPA, 2010c).

Other agencies have issued a variety of mandates and best practices that relate to fire department staffing. The Occupational Safety and Health Administration (OSHA), *29 CFR 1910.134: Respiratory Protection* (2008), commonly referred to as “two-in/two-out,” mandates that there must be a minimum of four personnel on the scene of a structural fire before personnel can initiate an interior attack. Two firefighters equipped with full turnout gear and self-contained breathing apparatus must remain on the exterior of the structure to act as a Rapid Intervention Team in the event the firefighters operating inside the structure become incapacitated or trapped.

The National Institute for Occupational Safety and Health (NIOSH), of the Centers for Disease Control and Prevention, has reported that fire departments across the nation lack adequate staffing, which has contributed to millions of dollars in time-lost injuries, thousands of on-the-job injuries, and dozens of line-of-duty deaths (LODDs) each year. An analysis of NIOSH Fire Fighter Fatality Investigation Program reports revealed that 92% of all reports from

2005 through 2009 found that “Fire Departments should ensure that adequate numbers of staff are available to immediately respond to emergency incidents” (NIOSH, 2010).

In a 2003 survey of over 10,000 members, the International Association of Fire Chiefs (IAFC) acknowledged that staffing was the greatest shared challenge faced by Department’s. Many departments are being forced to reduce staff due to financial cutbacks while at the same time they are encountering increased call volume and additional responsibilities (IAFC, 2004). The IAFC advocates a minimum of five persons on engine and ladder companies. Noting that the reduction of members per unit and that the number of units has reached dangerously low levels, the IAFC claims that it would be inappropriate to accept or support further reductions (IAFC, 2001b).

In *Managing Fire Services* (2002), the International City Management Association (ICMA), states that at least four and often eight or more firefighters, each under the supervision of an officer, should respond to fire suppression operations. Furthermore, if about 16 trained firefighters are not operating at the scene of a working fire within the critical time period, then dollar loss and injuries are significantly increased, as is fire spread. ICMA also found that five-person companies are 100 percent effective, four person companies are 65 percent effective, and three person companies are 38 percent effective. No data was provided to describe the effectiveness of two person companies (ICMA, 2002).

To effectively control fires, fire companies should respond with an adequate number of personnel to carry out the essential job functions assigned to their company and maintain compliance with applicable regulations. Dr. Denis Onieal, superintendent of the National Fire Academy, emphasizes this point in his statement that “we can only conclude that any department staffing either an engine or ladder company with fewer than four firefighters is understaffed.

Furthermore, any department that responds to building fires with fewer than the recommended number of properly staffed fire apparatus is providing a deficient municipal service” (Onieal, 1993, p.64).

A second and equally important benchmark of the NFPA 1710 standard relates to response times. Response times are perhaps the most commonly used indicators of emergency service system performance because of their relative ease of measurement and comprehension. Although response time itself is not a measure of quality of service, it does reflect the timeliness of service delivery, an attribute that is highly desired by the general population. In the fire service, total response time is generally measured from the time a call is received by the public safety answering point to the arrival of the first field unit at the scene. (Tri-Data, 2004)

Call receipt/processing time is the period of time between notification of the emergency alarm at the public safety answering point to the point in time when sufficient information is known to the dispatcher and applicable units are notified of the emergency. According to NFPA 1221, Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems, The maximum time for this component is 60 seconds and must be achieved for 90 percent of all incidents (NFPA, 2010a).

Turnout time is the period of time between unit notification of the emergency to the beginning point of response time. The 2010 edition of NFPA 1710 has added twenty seconds to this benchmark to allow for a maximum of 80 seconds for this component.

Response time is the period of time that begins when units are en-route to the emergency incident and ends when units arrive on incident location. This time component may also be referred to as travel time and must be achieved for 90 percent of all incidents. The first arriving engine company is allowed a maximum of 240 seconds for this component. Station location

generally has the greatest impact on travel time. Additional factors influencing travel time include traffic volume, weather, traffic devices, and whether a unit on the street needs to return to the station to staff the desired piece of apparatus (NFPA, 2010b).

The rationale behind the response time benchmarks of NFPA 1710 is the fact that a room and contents fire will reach a point of flashover in about 8 to 10 minutes. The variables are whether or not the fire room is ventilated, fuel load, size of the compartment and configuration. With flashover, the fire moves beyond the room of origin. NFPA 1710 response times are meant to ensure that flashover is prevented through fire control. With a good response time, fully staffed fire departments stand a much better chance of minimizing fire damage (Bruno, 2001).

On all EMS calls, NFPA 1710 also establishes a turnout time of 60 seconds, and 240 seconds or less for the arrival of a unit with first responder or higher level capability at an emergency medical incident. If a fire department provides ALS services, the standard recommends arrival of an ALS unit within 480 second response time. The standard also recommends that all firefighters who respond to medical emergencies be trained and equipped at a minimum to the first responder/AED level. Personnel dispatched to an ALS emergency should include a minimum of two providers trained at the Emergency Medical Technician-Paramedic (EMT-P) level and two people trained at the Emergency Medical Technician-Basic (EMT-B) level, all arriving within the established times (NFPA, 2010b).

The referenced standards illustrate industry best practices for safe and efficient operations; however, there are additional considerations that jurisdictions must take into account. Fire Department staffing and response times play a significant role when evaluating a jurisdiction's insurance ratings, ability to obtain accreditation, and legal liability.

The Fire Suppression Rating Schedule is the benchmark manual that the Insurance Services Office (ISO) uses in reviewing the fire-fighting capabilities of individual communities. The schedule measures the major elements of a community's fire-suppression system and develops a numerical grading called a Public Protection Classification (PPC). A PPC rating of Class One generally represents superior fire protection; while a rating Class Ten indicates that the area's fire-suppression program does not even meet ISO's minimum criteria (ISO, n.d.a).

If a fire district improves its PPC, homeowners and businesses in the community often save money on their insurance premiums. If property owners spend their savings in the community, the extra income may help to support the local economy. Furthermore, a community with improved fire protection may find it easier to attract new business, increasing jobs and boosting the economy (TriData, 2004).

Fifty percent of the overall grading is based on the number of engine companies and the amount of water a community needs to fight a fire. ISO reviews the distribution of fire companies throughout the area and checks that the fire department tests its pumps regularly and inventories each engine company's nozzles, hoses, breathing apparatus, and other equipment. ISO also reviews the fire-company records to determine firefighter response to emergencies (ISO, n.d.b).

Staffing models and unit response times may also have an impact on a department's ability to obtain accreditation. The Commission on Fire Accreditation International (CFAI) emerged from the collaborative efforts of the IAFC and the ICMA in 1996 as an independent authority to ensure that agencies seeking accreditation meet specific requirements and standards. The Accreditation process is important because it makes fire departments conduct a self-evaluation by identifying the department's strengths and weaknesses and developing an overall

improvement plan. Accreditation can benefit a department because it encourages quality improvement through a continuous self-assessment process (ICMA, 2002).

The eighth edition of the CFAI Fire and Emergency Self Assessment Manual (2009) suggests that a response force shall arrive pre-flashover with enough personnel to conduct basic fire tasks such as rescue, extinguishment, and property conservation. Although CFAI does not establish minimum staffing guidelines, they do set requirements to fulfill critical fire-ground tasks. CFAI does not define number of people on apparatus or types of apparatus that need to respond, but that personnel must arrive within enough time to initiate fire scene tasks prior to flashover.

An additional consideration that policy makers must take into account is that a jurisdiction assumes legal risk by failing to abide by NFPA 1710 (IAFF, 2001). NFPA 1710 does not need to be adopted, or implemented, unless there is language in collective bargaining agreements or state laws requiring the Standard to be adopted. However, there is little doubt if legal action is brought against a jurisdiction, the courts will look to this Standard to determine if staffing, response and deployment was reasonable (Reeves, 2006).

Although the NFPA's standards are not legally binding, it is important to consider NFPA standards whether or not they are adopted locally because NFPA standards have become the "standard of care" for fire and emergency service organizations. Historically, the courts have looked to NFPA Standards in deciding matters of civil litigation. Failure to follow standards that results in injuries or losses may be used as evidence of negligence on the part of the jurisdiction (Reeves, 2006).

In any negligence lawsuit against a municipality, a legal argument of the plaintiff could involve defining what a reasonable fire officer, fire chief, or community would have done. In

following this path, lawyers would ultimately look to the fire service at large to see if there was a general consensus on relevant standards of behavior (IAFC, 2001a) NFPA standards could be among those cited as representative of a fire service standard of behavior. So if a fire department differed from NFPA 1710 or had no standard, a litigant could argue that a relevant NFPA standard should be admitted into evidence so the jury could benchmark the fire department's act or omission against the relevant NFPA standard to help it make a decision (Rukavina, 2001).

The literature review provided the basic framework for the three research questions. These included NFPA 1710's response time and staffing objectives as well as PGFD's directives and SOPs that dealt with these areas. There has been a significant amount of literature written about fire department unit staffing and response times. This review revealed that there is a general consensus that the NFPA 1710 standard should be utilized as a benchmark for efficient, safe and timely fire and emergency medical service delivery.

Procedures

The first component of the research process began with a comprehensive literature examination at the University of Maryland student library in College Park, Maryland. The examination included reviews of books, journals, reports, and other written materials, as well as a number of Internet searches. The objective of this literature review was to establish a basic foundation for the conduct of research and to obtain original documents that were necessary to perform a proper evaluation of the subject matter.

During the literature review, an extensive analysis of the most current edition of NFPA 1710 was conducted. Several other NFPA standards, including NFPA 1221 and NFPA 1500, were evaluated to identify similar objectives. Furthermore, the objectives and findings of other fire service stakeholders were reviewed to determine if such findings complemented the

objectives outlined by NFPA 1710. The literature review and subsequent data analysis provided the information needed to answer the three research questions.

A statistical evaluation of engine company and ladder company unit staffing was conducted for all emergency responses during the period of January 1, 2009 to December 31, 2009. Data was extracted from the Computer Aided Dispatch (CAD) records utilizing the FIRESolv fire planning software by ARCBridge. The individual unit data was placed into usable form on a Microsoft Excel spreadsheet and is listed in Appendix A. The total deficient unit responses were added to obtain PGFD's cumulative deficient response total and overall percentage of NFPA 1710 compliance.

A statistical evaluation of engine company, BLS resource and ALS resource response times was conducted for all emergency responses during the period of January 1, 2009 to December 31, 2009. Data was extracted from the CAD records utilizing the plan feature of the FIRESolv software. The individual unit data was placed into usable form on a second Microsoft Excel spreadsheet that is illustrated in Appendix B. The total unit response times were combined to obtain PGFD's average engine and ladder response times and overall percentage of NFPA 1710 compliance.

A statistical evaluation of BLS resource failure rates was conducted for all emergency responses during the period of January 1, 2009 to December 31, 2009. Data was extracted from the CAD records utilizing the plan feature of the FIRESolv software. The individual unit data was placed into usable form on a second Microsoft Excel spreadsheet that is illustrated in Appendix C. The total unit failure rates were combined to obtain PGFD's total BLS resource deficiencies.

Finally, interviews were conducted with PGFD's Deputy Chief of Management Services, Lieutenant Colonel Angela Peden, and with the Bureau Chief of Research, Planning, and Development, Major Richard Lambdin, to provide the finance and planning perspectives of emergency service delivery.

Limitations and Assumptions

As with all research, there are limitations to the interpretation of the results and additional considerations that need to be taken into account when trying to generalize this analysis to broader issues. During the course of this research, the author encountered several limitations that are worthy of mention.

The most significant limitation to this research was the presentation of the data set for response times. NFPA 1710 establishes a 320 second response time which includes 80 seconds for turnout and 240 seconds for time of dispatch to scene arrival. The data set that was extracted from the CAD included the period of time between Prince George's County's Public Safety Communications (PSC) centers receipt of the emergency alarm to the time of dispatch. Therefore, in accordance with NFPA 1221, an extra 60 second allowance was added to the dataset when evaluating PGFD response times against the NFPA1710 benchmark.

An additional limitation was the manner in which PSC records its BLS resource availability. Due to the cross staffing model that is utilized by PGFD, when a station receives a fire call and the BLS ambulance is still in the station, the BLS resource is ignored by the dispatch system until the conclusion of the fire emergency. Therefore, this research was unable to gauge an accurate reading on the frequency of occasions that the first due BLS resource was unavailable.

Furthermore, the engine and ladder company staffing levels were only evaluated against a four person staffing requirement. NFPA 1710 suggests that jurisdictions with tactical hazards, high-hazard occupancies, high incident frequencies, geographical restrictions, or other pertinent shall be staffed with a minimum of five or six on duty members. The details of this limitation are reviewed in greater detail in the discussion section.

Finally, the data assumes that all figures were appropriately transmitted, received, recorded, and analyzed and that all records and published findings are accurate to a reasonable degree of certainty.

Results

Research Question 1: Did the Prince George's County Fire and EMS Department comply with the engine and ladder company staffing objectives that are suggested in NFPA 1710?

During CY2009, PGFD's engine companies complied with the four person minimum staffing objective in 66.59% of overall fire incidents. During the evaluation period, PGFD engine companies responded understaffed on 24,391 occasions and failed to respond to 2,926 calls for service. To meet the standard, PGFD engine companies would need to respond with a minimum of four personnel at least 90 percent of the time. Therefore, PGFD's engine company staffing levels do not comply with the objectives that are suggested in NFPA 1710.

During CY2009, PGFD's ladder companies complied with the four person minimum staffing objective in 69.18% of overall fire incidents. During the evaluation period, PGFD ladder companies responded understaffed on 6,125 occasions and failed to respond to 152 calls for service. To meet the standard, PGFD ladder companies would need to respond with a minimum of four personnel at least 90 percent of the time. Therefore, PGFD's ladder company staffing levels do not comply with the objectives that are suggested in NFPA 1710.

These figures illustrate that in FY09 PGFD had deficient responses to 32.42% of calls for service.

Table 1

Percentage Range of Deficient Responses by Company

<u>Understaffed %</u>	<u>Engine Companies</u>	<u>Ladder Companies</u>
0-24%	18	12
25-49%	12	14
50-74%	11	6
> 75%	3	1

Research Question 2: Did the Prince George's County Fire and EMS Department comply with the response time objectives for fire and emergency medical incidents that are suggested in NFPA 1710?

During CY2009, PGFD's engine companies complied with the 80 second turnout time and the 240 second response time in only 40 percent of overall fire incidents. The mean engine company turnout and response time was 410 seconds. When evaluating the data against the 60 second dispatch objective, the 80 second turnout objective and the 240 second response time objective, PGFD would need to achieve a 380 second engine company response time at least 90 percent of the time. Therefore, PGFD's engine company response times do not comply with the objectives that are suggested in NFPA 1710.

During CY2009, PGFD's Basic Life Support (BLS) ambulances complied with the 80 second turnout time and the 240 second response time in only 8.89% of overall BLS incidents.

The mean BLS turnout and response time was 475 seconds. When evaluating the data against the 60 second dispatch objective, the 80 second turnout objective and the 240 second response time objective, PGFD would need to achieve a 380 second BLS ambulance response time at least 90 percent of the time. Therefore, PGFD's BLS ambulance response times do not comply with the objectives that are suggested in NFPA 1710.

During CY2009, PGFD's Advanced Life Support (ALS) ambulances complied with the 80 second turnout time and the 480 second response time in 71.11% of overall ALS incidents. The mean ALS turnout and response time was 568 seconds. When evaluating the data against the 60 second dispatch objective, the 80 second turnout objective and the 480 second response time objective, PGFD would need to achieve a 620 second ALS ambulance response time at least ninety percent of the time. Therefore, PGFD's ALS ambulance response times do not comply with the objectives that are suggested in NFPA 1710.

Research Question 3: Did the Prince George's County Fire and EMS Department's cross-staffing model impact BLS service delivery?

During CY2009, PGFD's Basic Life Support (BLS) ambulances failed to respond to 4,919 calls for service. This figure reflects a failure rate of 3.4% and does not take into account the frequent occasions at which BLS resources are ignored by the CAD due to a simultaneous fire emergency. This is a direct result of the fact that PGFD does not provide dedicated staffing for ambulances. Therefore, PGFD's cross-staffing model has an adverse impact on BLS service delivery.

Discussion

PGFD serves a very different community than it did when the department was initially organized. Forty years ago, the Department was primarily comprised of separate volunteer fire companies that protected a predominantly rural and suburban environment. Call volume was limited and emergency medical services were delivered sporadically by personnel that were advanced first-aid certified. Career staffing was limited to one or two paid drivers in the more urban areas of the county (PGFD, 2005a). Each volunteer station was able to provide a reasonable level of service to the community by utilizing volunteers who lived in the community and responded directly to the station when a call was received. In this environment, the PGFD was able to maintain the service levels expected by the community (TriData, 2004)

Today, the PGFD protects a diverse and more urban community where technology and the demands for services due to rapid population expansion is an everyday and ongoing issue. However, like many communities nationwide, the Department has not kept pace with increasing growth and demand. The current volunteer force in relation to staffing can only be characterized as a codependent. As a result of changing demographics, urban, suburban and rural real estate development and volunteer participation levels, the PGFD is and has been in a transitional phase for a number of years (PGFD, 2008). Increasingly, the volunteer force is becoming a supplemental one. Based on national studies it is reasonable to expect that volunteer participation levels will continue to decrease despite repeated attempts to attract new members (IAFC, 2004).

Accurate volunteer participation levels are very hard to quantify due to the fluctuating nature of sustained volunteer participation in some corporations. Although FY09 respiratory fit test data indicates that 828 volunteers are qualified to wear and operate a self contained breathing

apparatus, staffing on the volunteer side is predicated on participation. Many of the corporations have solid roster records and participation, while others are less reliable, and this affects the solidity of the numbers cited, as well as factoring in this important component into the staffing matrix (PGFD, 2008)

The career staffing configurations are extremely convoluted and complex (Appendix D). They are based on coverage for what are virtually two departments in one: career and volunteer. In looking at similar counties in the area with combination departments, PGFD has by far the least amount of career staffing levels. In contrast to the other area departments, PGFD has a larger resident population, is responsible for a greater sized geographic area, and with an annual call volume of 139,000, is the fifteenth busiest fire department in the United States. However, PGFD currently operates with a total authorized staffing of 765 authorized personnel, of which only 671 are currently filled (PGFD, 2010)

To gauge a fire department's service delivery capabilities, it is beneficial to compare departments that are similar in composition and size. In comparison to neighboring combination departments, PGFD's 0.73 career personnel for every 1000 residents is significantly lower than the next lowest department. Nearby Montgomery County, Maryland provides 1.18 career personnel for every 1000 residents. The average compliment of personnel for all of the jurisdictions surrounding Prince George's County is 1.32 career personnel for every 1000 residents (PGFD, 2008).

Overall, the decision about how to staff stations is more the result of a concern about the lack of volunteer personnel than it is about a conscious decision on what staffing level is appropriate for each station or region within the county. Essentially, decisions about staffing have been incremental in nature and many times the decision is based solely on whether

someone in the volunteer organization believes that enough volunteer personnel are available. Even more, sometimes the decision is based on tradition and the desire by some volunteer stations not to have career staff in their station even when the need obviously exists. In essence, staffing decisions are made more on feeling than on a process of assessing information and working from a strategic plan (TriData, 2004).

The analysis of the results illustrated the deficiencies of PGFD's staffing model. The cross staffing of fire and emergency medical apparatus is drastically reducing the number of employees that are available to respond to fire emergencies and in many cases delaying the ability to deploy BLS resources. This has a negative impact on the entire Fire and EMS service delivery system as additional units must be pulled from further geographical areas to make up the required staffing complement. The current staffing model results in large gaps in Fire and EMS protection (R. Lambdin, personal communication, February 15, 2010).

The frequency of PGFD's CY2009 deficient responses to fire emergencies was alarmingly high. The deficient response figure of 33,594 incidents reflects a failure to meet NFPA 1710 staffing levels 32.42% of the Department's total call volume. However, when analyzed against NFPA 1710, it is important to recognize this figure is lower than the actual figures due to the following limitations of the research.

PGFD has a significant number of tactical hazards, high-hazard occupancies, geographical restrictions and high-incident frequencies within the jurisdiction and should therefore staff many of its companies with five or six personnel to comply with the standard (NFPA, 2010b). Several PGFD companies are first due to power plants, military installations, hazardous materials sites, and other locations with tactical hazards. Five companies are located in the rural tier where water supply and the time delay for additional arriving units are

significant. Furthermore, 38 PGFD companies have an incident frequency of over 5,000 calls for service each year. Since the Department has not formally identified which of its stations meet the referenced criteria, all units that responded with four personnel were not added into the understaffed response total (R. Lambdin, personal communication, February 15, 2010).

An additional consideration that must be taken in account is that the frequency of deficient responses varies greatly by individual company. A number of companies, generally those with low call volume, have very few understaffed totals. However, this is the exception and not the rule. PGFD operates 17 companies that respond understaffed greater 50 percent of the time and four companies that respond understaffed greater than 75 percent of the time. Clearly, the companies that have such high understaffed frequency rates are often operating in an unsafe manner (Appendix A).

OSHA 29 CFR 1910.120: Respiratory Protection (2008) requires that fire suppression operations be conducted only when sufficient personnel are assembled at the incident scene to allow for at least two firefighters performing interior operations, and two firefighters on the exterior to be immediately available to intervene in case of a fire-ground emergency. On many fire emergencies, PGFD is unable to initiate safe and effective fire suppression and rescue operations in accordance with this regulation. Any time that the Department responds to a simultaneously occurring emergency, such as a medical alarm, it effectively reduces the pool of available personnel by 50 percent: from four firefighters to two firefighters (PGFD, 2008).

PGFD has been extremely fortunate that its staffing profile has not resulted in a line of duty death. However, the department has experienced a number of near miss incidents that have resulted in serious fire fighter injuries. In February 2004, a career lieutenant was critically injured while searching for trapped occupants at a single family dwelling fire in the Oxon Hill

area of the County (PGFD, 2004). In December 2004, a volunteer captain was critically injured while after running out of air in the basement of a single family dwelling fire in the Seat Pleasant area of the County (PGFD, 2005b). In May 2009, two career captains, one career lieutenant, four career firefighters and one volunteer firefighter sustained serious injury as a result of an explosion while operating at the scene of a natural gas leak in the Forestville area of the County (NIOSH, 2010). All of the subsequent safety investigations revealed that understaffed units played an adverse role.

Another area that PGFD's staffing model has an impact is on unit response times, particularly in the area of BLS resources. PGFD's BLS ambulance response times are nowhere near compliance with the objectives that are suggested in NFPA 1710. During CY2009, PGFD's Basic Life Support (BLS) ambulances complied with response times in only 8.89% of overall BLS incidents.

The low compliance for response time objectives may somewhat be attributed to high call volume, resulting in the closest ambulance being unavailable due to another simultaneous emergency. However, a frequent delay in PGFD's BLS response times is as a result of the need for an engine or ladder company to respond back to the station to provide staffing for the BLS resource. If PGFD were to provide dedicated staffing to its ambulances, this action would guarantee that the resource could initiate an immediate response without the need to wait for fire apparatus to return to the station (TriData, 2004).

The financial implication for Prince George's County posed perhaps the largest obstacle to its ability to comply with the staffing and response time objectives of NFPA 1710. As the tax data revealed, the County was at an economic disadvantage. The cost of hiring the number of personnel that would be necessary to staff each company was approximately \$20 million. Prince

George's County simply did not have the money to do this, and probably would not for the foreseeable future (A. Peden, personal communication, January 30, 2010).

The proposed Fiscal Year 2011 General Budget for Prince George's County is \$2,593,900,000. Of that amount, \$399,100,000, or 15.4%, is earmarked for public safety. The Fire and EMS Department is slated to receive \$124,368,600. The entire Fire and EMS Department budget is derived from General Fund revenues. Like most municipalities, Prince George's County raises a majority of its revenue from property taxes and income taxes (Prince George's County, 2010).

Real property taxes are the annual taxes that are levied on land and improvements of taxable real property. Real property tax is the largest tax revenue of the County. The revenue yield is dependent on a number of variables, including the State of Maryland's property assessment process, assessment growth caps for owner-occupied property and the housing market and economy in general (Prince George's County, 2010)

In the 1978 General Election, the voters of Prince George's County adopted an amendment to the County Charter that limited future collections of real property taxes. The measure, Tax Reform Initiative by Marylanders (TRIM), prohibited the County Council from raising property taxes greater than the amount collected in FY79. Subsequently, TRIM was amended to allow the County Council to levy a maximum tax of \$0.96 for every \$100.00 of assessed property value. TRIM can be only revised or eliminated either by referendum or by state legislation that would allow the County Council to kill the cap (TriData, 2004)

The County's real property tax revenue capacity is not fully realized due to the structure of the County's Homestead Tax credit. The credit is tied to the Consumer Price Index growth for the 12 preceding months and caps the growth of owner-occupied property assessments for tax

purposes. Because of the tax credit, no Prince George's property tax bill can rise more than 5 percent each year, regardless of how quickly a home's assessment has increased in recent years (Prince George's County, 2010).

Prince George's County financial constraints such as TRIM and a reliance on a tax base that is primarily residential have presented great challenges in generating the additional revenue needed to fund public safety. In a recent interview, Maryland State Delegate Joanne Benson indicated that "Research showed us that if we put this initiative in place, in 25 years we were going to see a devastating impact on public education and public safety, and that is exactly what has happened" (Tate & Krughoff, 2003, ¶22).

Recommendations

Based upon the results of this study, it is evident that the PGFD is not adhering to the staffing and response time objectives of NFPA 1710. Areas needing improvement have been identified and a strategic plan should be established to address the areas that need corrective action. Summarized below are recommendations for adhering to and maintaining compliance with NFPA 1710, thus ensuring that employees operate in a safe and efficient manner and the citizens of Prince George's County receive the best possible service.

PGFD should consider adjusting its focus to unit staffing versus the present organizational mindset of station staffing. The practice of station staffing instead of employing unit staffing is undoubtedly out of necessity on management's part based on the number of personnel it can commit and deploy. This is a department that is too big, too complex and has an incident demand that is too high to continue to respond in this staffing mode. This will require a transitional long term investment that includes the hiring of additional career personnel. This is not a small commitment for the leaders and the citizens of Prince George's County to

contemplate. It is, however, one that when fully realized and objectively weighed out will have an overwhelmingly positive impact on the service to the community.

PGFD should consider setting annual response time goals incrementally tougher than the year before with an overall goal to reach 90 percent compliance. This gives the Department time to implement changes, analyze their impact on the system, and make changes as necessary to reach goals. This also includes time to build additional stations, which will significantly impact response times.

PGFD should aggressively foster relationships with key stake holders in the community to educate them on the need for increased funding. The PGFD will require an extensive and costly overhaul over the course of the next few years. It is imperative that key policy makers and community leaders have a comprehensive understanding of the Department's needs so that budget and resources can be allocated as needed. In a jurisdiction where raising additional tax revenue is highly unlikely, it is important to justify that the fire service is a priority.

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Appendix A
PGFD Frequency and Percentage of Understaffed Responses

STATION LOCATION	Understaffed Engine Frequency	Understaffed Engine Percentage	FTR Engine Frequency	FTR Engine Percentage	Understaffed Truck/Squad Frequency	Understaffed Truck/Squad Percentage	FTR Truck/Squad Frequency	FTR Truck/Squad Percentage
Station 801 - Hyattsville	299	18	26	2	69	12	7	1
Station 805 - Capitol Heights	527	29	500	28	194	55	51	14
Station 807 - Riverdale	102	9	1	0	21	9	0	0
Station 808 - Seat Pleasant	324	24	0	0	829	44	0	0
Station 809 - Bladensburg	0	0	0	0	0	0	0	0
Station 810 - Laurel	304	15	2	0	34	10	0	0
Station 811 - Branchville	459	22	61	3	N/A	N/A	N/A	N/A
Station 812 - College Park	71	6	0	0	7	2	0	0
Station 813 - Riverdale Heights	422	31	151	11	N/A	N/A	N/A	N/A
Station 814 - Berwyn Heights	N/A	N/A	N/A	N/A	102	4	0	0
Station 816 - Northview	0	0	0	0	N/A	N/A	N/A	N/A
Station 817 - Blvd Heights	595	34	659	38	83	65	22	10
Station 818 - Glenn Dale	147	16	0	0	252	27	1	0
Station 819 - Bowie Old Town	366	53	2	0	41	21	0	0
Station 820 - Upper Marlboro	148	20	14	2	325	40	25	3
Station 821 - Oxon Hill	1001	59	20	1	229	42	1	0
Station 822 - Cheverly	113	34	0	0	434	41	0	0
Station 823 - Forestville	702	35	548	27	N/A	N/A	N/A	N/A
Station 824 - Accokeek	126	16	34	4	37	26	2	1
Station 825 - Clinton	929	35	74	3	190	45	4	1
Station 826 - District Heights	458	12	23	1	371	51	0	0
Station 827 - Morningside	127	12	8	1	594	26	12	1
Station 828 - Lanham	14	0	2	0	18	2	0	0
Station 829 - Silver Hill	2588	63	0	0	137	52	0	0
Station 830 - Landover Hills	507	38	0	0	78	30	0	0
Station 831 - Beltsville	235	16	5	0	40	13	2	1
Station 832 - Allentown Road	892	54	0	0	191	40	0	0
Station 833 - Kentland	0	0	0	0	0	0	0	0
Station 834 - Chillum Adelphi	315	13	24	1	49	14	1	0
Station 835 - Greenbelt	350	22	96	6	N/A	N/A	N/A	N/A
Station 836 - Baden	147	30	16	3	N/A	N/A	N/A	N/A
Station 837 - Ritchie	370	13	24	1	N/A	N/A	N/A	N/A
Station 838 - Chapel Oaks	508	35	204	15	N/A	N/A	N/A	N/A
Station 839 - Bowie Main	475	33	10	1	44	31	0	0
Station 840 - Brandywine	217	27	0	0	390	51	1	0
Station 841 - Calverton	1961	75	0	0	15	29	0	0

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Station 842 - Oxon Hill	2908	75	0	0	N/A	N/A	N/A	N/A
Station 843 - Mitchellville	594	37	21	1	40	22	2	1
Station 844 - Chillum	1388	76	13	1	N/A	N/A	N/A	N/A
Station 845 - Croom	541	51	13	1	36	31	0	0
Station 846 - Largo	1521	49	11	1	N/A	N/A	N/A	N/A
Station 847 - Fort Washington	194	26	1	0	780	57	3	0
Station 848 - Lanham Hills	801	41	325	17	N/A	N/A	N/A	N/A
Station 849 - Laurel Rescue	414	27	33	2	400	52	18	2
Station 855 - Bunker Hill	231	18	5	0	95	38	0	0
Totals:	24391	29.52272727	2926	3.8863636	6125	29.7575758	152	1.06060606

Appendix B

PGFD Engine Company, BLS Resource, and ALS Resource Response Times

STATION LOCATION	Median CY2009 BLS Ambulance Response Times	NFPA 1710 Compliant	Median CY2009 ALS Medic Unit Response Times	NFPA 1710 Compliant	Median CY2009 Engine Company Response Times	NFPA 1710 Compliant
		6:20		10:20		6:20
Station 801 - Hyattsville	6:24	NO	8:30	YES	5:12	YES
Station 805 - Capitol Heights	7:11	NO	7:08	YES	5:40	YES
Station 807 - Riverdale	6:03	YES	7:07	YES	4:29	YES
Station 808 - Seat Pleasant	7:04	NO	9:07	YES	6:10	YES
Station 809 - Bladensburg	6:15	YES	8:34	YES	5:03	YES
Station 810 - Laurel	8:02	NO	9:26	YES	6:38	NO
Station 811 - Branchville	6:50	NO	8:31	YES	5:53	YES
Station 812 - College Park	6:09	YES	7:02	YES	4:59	YES
Station 813 - Riverdale Heights	7:01	NO	9:42	YES	5:56	YES
Station 814 - Berwyn Heights	6:10	YES	9:24	YES	5:53	YES
Station 816 - Northview	7:56	NO	7:42	YES	6:46	NO
Station 817 - Boulevard Heights	8:08	NO	9:22	YES	7:06	NO
Station 818 - Glenn Dale	9:23	NO	9:38	YES	7:30	NO
Station 819 - Bowie Old Town	8:23	NO	11:38	NO	7:35	NO
Station 820 - Upper Marlboro	9:30	NO	9:20	YES	8:12	NO
Station 821 - Oxon Hill	8:24	NO	10:30	NO	7:48	NO
Station 822 - Cheverly	7:05	NO	10:34	NO	6:46	NO
Station 823 - Forestville	8:13	NO	11:35	NO	7:28	NO
Station 824 - Accokeek	8:30	NO	13:06	NO	8:03	NO
Station 825 - Clinton	8:40	NO	8:41	YES	7:27	NO
Station 826 - District Heights	7:19	NO	10:03	YES	6:16	YES
Station 827 - Morningside	7:59	NO	9:35	YES	7:02	NO
Station 828 - Lanham	8:58	NO	9:23	YES	6:14	YES
Station 829 - Silver Hill	8:17	NO	8:24	YES	7:01	NO
Station 830 - Landover Hills	7:06	NO	7:08	YES	5:39	YES
Station 831 - Beltsville	7:40	NO	10:04	YES	7:02	NO
Station 832 - Allentown Road	8:59	NO	11:21	NO	7:58	NO
Station 833 - Kentland	7:58	NO	10:06	YES	5:27	YES
Station 834 - Chillum Adelphi	6:46	NO	8:42	YES	5:58	YES
Station 835 - Greenbelt	7:26	NO	10:54	NO	6:52	NO
Station 836 - Baden	9:59	NO	12:23	NO	9:47	NO
Station 837 - Ritchie	9:27	NO	11:20	NO	6:11	YES
Station 838 - Chapel Oaks	6:51	NO	10:57	NO	5:48	YES
Station 839 - Bowie Main	8:03	NO	11:10	NO	7:13	NO

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Station 840 - Brandywine	9:14	NO	9:49	YES	9:34	NO
Station 841 - Calverton	7:59	NO	8:05	YES	7:17	NO
Station 842 - Oxon Hill	8:00	NO	7:51	YES	6:56	NO
Station 843 - Mitchellville	9:30	NO	9:44	YES	8:15	NO
Station 844 - Chillum	7:11	NO	6:19	YES	6:04	YES
Station 845 - Croom	9:49	NO	13:03	NO	8:59	NO
Station 846 - Largo	8:44	NO	8:56	YES	7:04	NO
Station 847 - Fort Washington	8:42	NO	8:22	YES	8:25	NO
Station 848 - West Lanham Hills	8:35	NO	10:33	NO	7:18	NO
Station 849 - Laurel Rescue	7:54	NO	8:13	YES	7:18	NO
Station 855 - Bunker Hill	6:45	NO	7:37	YES	5:40	YES
	7:55		9:28		6:50	
YES		4		32		18
NO		41		13		27
		91.11%		28.89%		60.00%

Appendix C

Basic Life Support (BLS) Resource Failure to Respond (FTR) Rates

STATION LOCATION	FTR Ambulance Frequency	FTR Ambulance Percentage
Station 801 - Hyattsville	16	1
Station 805 - Capitol Heights	1545	40
Station 807 - Riverdale	0	0
Station 808 - Seat Pleasant	1	0
Station 809 - Bladensburg	0	0
Station 810 - Laurel	6	0
Station 811 - Branchville	38	2
Station 812 - College Park	0	0
Station 813 - Riverdale Heights	184	7
Station 814 - Berwyn Heights	0	0
Station 816 - Northview	0	0
Station 817 - Boulevard Heights	2286	60
Station 818 - Glenn Dale	56	3
Station 819 - Bowie Old Town	0	0
Station 820 - Upper Marlboro	0	0
Station 821 - Oxon Hill	50	2
Station 822 - Cheverly	0	0
Station 823 - Forestville	30	1
Station 824 - Accokeek	28	3
Station 825 - Clinton	17	0
Station 826 - District Heights	56	1
Station 827 - Morningside	0	0
Station 828 - Lanham	N/A	N/A
Station 829 - Silver Hill	0	0
Station 830 - Landover Hills	0	0
Station 831 - Beltsville	0	0
Station 832 - Allentown Road	0	0
Station 833 - Kentland	0	0
Station 834 - Chillum Adelphi	1	0
Station 835 - Greenbelt	58	3
Station 836 - Baden	25	5
Station 837 - Ritchie	N/A	N/A
Station 838 - Chapel Oaks	116	4
Station 839 - Bowie Main	1	0
Station 840 - Brandywine	0	0
Station 841 - Calverton	0	0

Station 842 - Oxon Hill	0	0
Station 843 - Mitchellville	0	0
Station 844 - Chillum	15	1
Station 845 - Croom	7	1
Station 846 - Largo	2	0
Station 847 - Fort Washington	0	0
Station 848 - West Lanham Hills	321	10
Station 849 - Laurel Rescue	59	2
Station 855 - Bunker Hill	1	0
TOTALS:	4919 Calls	3.4%

Appendix D

PGFD Career Staffing Deployment: March 2010

Station		Positions			Positions by Ranks						
#	Name	Day	24/7	Tot	Maj	B/C	Capt	Lt	Tech	FF	Tot
1	Hyattsville	4	0	4	0	0	0	1	1	2	4
5	Capitol Heights	0	0	0	0	0	0	0	0	0	0
7	Riverdale	4	0	4	0	0	0	1	1	2	4
8	Seat Pleasant	2	2	10	0	0	1	0	1	8	10
9	Bladensburg	0	0	0	0	0	0	0	0	0	0
10	Laurel	4	0	4	0	0	0	1	1	2	4
11	Branchville	4	0	4	0	0	0	1	1	2	4
12	College Park	4	0	4	0	0	0	1	1	2	4
13	Riverdale Heights	0	0	0	0	0	0	0	0	0	0
14	Berwyn Heights	4	0	4	0	0	0	1	1	2	4
16	Northview	0	5	20	0	0	1	3	1	15	20
17	Boulevard Heights	4	0	4	0	0	0	1	1	2	4
18	Glenn Dale	4	0	4	0	0	0	1	1	2	4
19	Bowie #1	0	4	16	0	0	1	3	1	11	16
20	Marlboro #1	2	2	10	0	0	1	0	1	8	10
21	Oxon Hill #1	0	4	16	0	0	1	3	1	11	16
22	Cheverly	0	4	16	0	0	1	3	2	10	16
23	Forestville	2	2	10	0	0	1	0	1	8	10
24	Accokeek	4	0	4	0	0	0	1	1	2	4
25	Clinton	2	2	10	0	0	1	0	1	8	10
26	District Heights	0	7	28	0	0	1	3	1	23	28
27	Morningside	2	2	10	0	0	1	0	1	8	10
28	W. Lanham Hills #1	4	0	4	0	0	0	1	1	2	4
29	Silver Hill	0	4	16	0	0	1	3	1	11	16
30	Landover Hills	0	5	20	0	0	1	3	2	14	20
31	Beltsville #1	2	2	10	0	0	1	0	1	8	10
32	Allentown Road #1	0	4	16	0	0	1	3	1	11	16
33	Kentland #1	0	2	8	0	0	0	0	0	8	8
34	Chillum-Adelphi	0	4	16	0	0	1	3	1	11	16
35	Greenbelt	4	0	4	0	0	0	1	1	2	4
36	Baden	4	0	4	0	0	0	1	1	2	4
37	Ritchie	0	0	0	0	0	0	0	0	0	0
38	Chapel Oaks	2	2	10	0	0	1	0	1	8	10
39	Bowie #2	2	2	10	0	0	1	0	1	8	10
40	Brandywine	0	5	20	0	0	1	3	1	15	20
41	Beltsville #2	0	4	16	0	0	1	3	4	8	16
42	Oxon Hill #2	0	4	16	0	0	1	3	4	8	16
43	Bowie #3	2	2	10	0	0	1	0	1	8	10
44	Chillum	0	0	0	0	0	0	0	0	0	0
45	Marlboro #2	0	4	16	0	0	1	3	2	10	16
46	Kentland #2	0	4	16	0	0	1	3	4	8	16
47	Allentown Road #2	0	4	16	0	0	1	3	2	10	16
48	W. Lanham Hills #2	4	0	4	0	0	0	1	1	2	4
49	Laurel Rescue	4	0	4	0	0	0	1	1	2	4

55	Bunker Hill	0	5	20	0	0	1	3	1	15	20
58	National Harbor	0	0	0	0	0	0	0	0	0	0
Medic Units (11)		0	22	88	0	0	0	0	0	88	88
EMS Supervisory		0	1	4	0	0	4	0	0	0	4
EOC Supervisory		4	3	16	0	16	0	0	0	0	16
SUBTOTALS		78	117	546	0	16	29	62	52	387	546
Contractual Annual Leave (13%)					0	2	4	8	7	50	71
Sick Leave (5%)					0	1	1	3	3	19	27
FMLA, Military, IOJ, Leave (6%)					0	1	2	4	3	23	33
EOC TOTALS		78	117	546	0	20	36	77	64	480	677
Assignment	Positions			Positions by Ranks							
	Day	24/7	Tot	Maj	B/C	Capt	Lt	Tech	FF	Tot	
EOC Command		2	1	6	6	0	0	0	0	0	6
Staff Positions		52	0	52	12	5	4	13	5	13	52
TOTAL STAFFING COMPLEMENT					18	25	40	90	69	493	735

Command/Assignment	Positions by Ranks									
	FC	LC	Maj	B/C	Capt	Lt	Tech	FF	Tot	
Office of the Fire Chief	1	0	1	1	0	1	1	0	5	
Office of the Fire Marshall	0	0	1	1	1	4	2	10	19	
Management Services	0	1	0	0	0	0	0	0	1	
Support Services	0	1	0	0	0	1	0	0	2	
Administrative Services	0	1	0	0	0	0	0	0	1	
Emergency Operations	0	1	0	0	0	0	0	0	1	
Training Academy	0	0	1	0	1	1	1	3	7	
Research & Planning	0	0	1	0	0	0	0	0	1	
Risk Management	0	0	1	0	0	2	0	0	3	
Advanced Emergency Medical	0	0	1	1	1	2	0	0	5	
Union Detail (contractual)	0	0	0	0	0	1	1	0	2	
PSD Office Detail	0	1	0	2	1	1	0	0	5	
STAFF TOTALS	1	5	6	5	4	13	5	13	52	